

Reply Under 37 C.F.R. § 1.116 – Expedited Procedure
Serial No.: 09/343,517
Group Art Unit: 2663
Examiner: Derrick W. Ferris

REMARKS

Claims 1, 3 through 6, 24 through 26 remain in this application. Claim 27 has been added.

Claim rejections under 35 U.S.C. 103

The Office Action rejected claims 1, 3 through 6 and 24 through 26 as being unpatentable over U.S. Patent No. 5,461,624 (the "Mazzola reference") in view of the article, "TUBA: Replacing IP with CLNP," (the "Katz reference"). However, the references either alone or in combination fail to disclose or suggest the requirements of the claims.

Independent Claim 1 and dependent claims 3 through 6

Independent claim 1 requires receiving IP packets from a remote IP management device at a local IP gateway connected to the synchronous optical network; and routing the IP packet to an IP tunneling layer network interface, wherein the IP tunneling layer network interface translates the IP packet to a second protocol to be transmitted over a data communications channel in overhead of frames in the synchronous optical network to a remote IP gateway connected to the IP device.

The Office Action states that the Mazzola reference is silent in running IP over SONET but that the Katz reference teaches mapping IP over CLNP. However, the Katz reference does not teach mapping IP over CLNP, but rather with replacing IP with CLNP to solve the Internet's addressing and routing problems. As stated in the first paragraph, "We propose using the Connectionless Network Protocol (CLNP) supported by the associated OSI routing protocols, as a replacement for IP." The quotation in the Office Action of mapping IP functionality to CLNP on page 44 of the Katz reference explains how CLNP can be used as a replacement to IP, stating, "Using CLNP in place of IP requires that all three services of IP visible from the transport layer be mapped to CLNP." Thus, the Katz reference nowhere promotes the translation of IP into CLNP but rather the replacement of IP with CLNP.

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Even if Mazzola reference and the Katz reference are combined, neither suggests or discloses translating IP packets for transmission over DCC channel in overhead of a synchronous optical frame. The motivation provided by the Office Action is the above reference to page 44 that states “most functions of IP map directly to matching functions in CLNP.” Again, this quote refers to how functions of IP can be mapped to CLNP so that CLNP can be used as a replacement to IP. It does not promote or suggest mapping IP packets into CLNP for transmission over DCC channel in overhead of a synchronous optical frame for remote management of IP devices. The other motivation described in the Office Action is “due to problems with Internet growth and IP addressing.” However, this motivation is provided in Katz for replacement of IP by CLNP. This does not provide a motivation for the present invention. The problems of Internet growth and IP addressing are addressed by the present invention.

The only other motivation cited in the Office Action is that the Mazzola reference provides block diagrams of an IS circuit pack and an ES/IS circuit specific for a SONET application and states that an IS circuit pack and ES/IS circuit pack type distributed routing network element may be used in connection with other protocols as well, at column 5, lines 7 through 11. The fact that distributed routing network element may be used in connection with other protocols is not a suggestion of translating an IP packet to a second protocol to be transmitted over a data communications channel in overhead of frames in a synchronous optical network to provide remote management of IP devices.

As stated in the present specification, the motivation behind the present invention is to provide remote management of IP devices by a local IP device over a SONET network. Such problem is not presented or discussed in the Katz reference.

Independent Claim 24 and dependent claims 25 and 26

Independent claim 24 requires a first interface for receiving IP packets from the IP network; a routing table for storing information about IP devices connected to network elements in the synchronous optical network; and an IP tunneling layer network interface that translates

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the IP packets into a second protocol to be communicated over a data communication channel in overhead of synchronous optical frames in the synchronous optical network and wherein the routing table is used to determine a destination network element in the synchronous optical network.

The cited prior art fails to show the requirement of claim 24, *inter alia*, of, “an IP tunneling layer network interface that translates the IP packets into a second protocol to be communicated over a data communication channel in overhead of synchronous optical frames in the synchronous optical network.” As stated in the Office Action, the Mazzola reference does not show routing IP over SONET. Furthermore, the Katz reference fails to add to the disclosure of the Mazzola reference. The Katz reference nowhere discloses a synchronous optical network or a DCC channel in SONET or SDH overhead or transmitting IP packets over DCC channel in a SONET or SDH network.

The Office Action states that the Katz teaches mapping IP over CLNP. However, Katz does not teach mapping IP over CLNP, but rather with replacing IP with CLNP to solve the Internet’s addressing and routing problems. As stated in the first paragraph, “We propose using the Connectionless Network Protocol (CLNP) supported by the associated OSI routing protocols, as a replacement for IP.” The quotation in the Office Action of mapping IP functionality to CLNP on page 44 of the Katz reference explains how CLNP can be used as a replacement to IP, stating, “Using CLNP in place of IP requires that all three services of IP visible from the transport layer be mapped to CLNP.” Thus, the Katz reference nowhere promotes the translation of IP into CLNP but rather the replacement of IP with CLNP.

Even if Mazzola reference and the Katz reference are combined, neither suggests or discloses translating IP packets for transmission over DCC channel in overhead of a synchronous optical frame. The motivation provided by the Office Action is the above reference to page 44 that states “most functions of IP map directly to matching functions in CLNP.” Again, this quote refers to how functions of IP can be mapped to CLNP so that CLNP can be used as a replacement to IP. It does not promote or suggest mapping IP packets into CLNP for

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transmission over DCC channel in overhead of a synchronous optical frame for remote management of IP devices. The other motivation described in the Office Action is “due to problems with Internet growth and IP addressing.” However, this motivation is provided in Katz for replacement of IP by CLNP. This does not provide a motivation for the present invention. The problems of Internet growth and IP addressing are addressed by the present invention.

The only other motivation cited in the Office Action is that the Mazzola reference provides block diagrams of an IS circuit pack and an ES/IS circuit specific for a SONET application and states that an IS circuit pack and ES/IS circuit pack type distributed routing network element may be used in connection with other protocols as well, at column 5, lines 7 through 11. The fact that distributed routing network element may be used in connection with other protocols is not a suggestion of translating an IP packet to a second protocol to be transmitted over a data communications channel in overhead of frames in a synchronous optical network to provide remote management of IP devices.

Independent Claim 27

Independent Claim 27 requires a line driver element that communicates with the local IP device and receives IP packets with a destination address to one or more remote IP devices; one or more routing tables for providing routing information for IP tunnels through the synchronous optical network to a destination network element with functionality to provide a gateway to the one or more remote IP devices, wherein the one or more routing tables assign network ports in the network element for routing to each of the one or more remote IP devices through the destination network elements; an internet protocol tunneling layer network interface that translates IP packets received by the network element into a second protocol; a synchronous optical network port that transmits the translated IP packet over a data communication channel in overhead of synchronous optical frames in the synchronous optical network, wherein the network port was selected in response to the routing tables and destination address of the remote IP device.

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The cited prior art fails to show the requirement of claim 27 for the reasons stated above. In addition, the cited prior art fails to disclose the requirements of claim 27, inter alia, of "one or more routing tables for providing routing information for IP tunnels through the synchronous optical network to a destination network element with functionality to provide a gateway to the one or more remote IP devices, wherein the one or more routing tables assign network ports in the network element for routing to each of the one or more remote IP devices through the destination network elements." Neither the Katz reference nor the Mazzola reference disclose or suggest such routing tables that define IP tunnels through the synchronous optical network to a destination network element with functionality to provide a gateway to the one or more remote IP devices, wherein the one or more routing tables assign network ports in the network element for routing to each of the one or more remote IP devices through the destination network elements.

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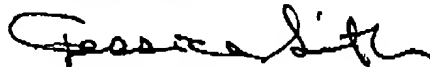
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Conclusion

For the above reasons, the foregoing amendment places the Application in condition for allowance. Therefore, it is respectfully requested that the rejection of the claims be withdrawn and full allowance granted. Should the Examiner have any further comments or suggestions, please contact Jessica Smith at (972) 477-9109.

Respectfully submitted,

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